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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/005,178	12/07/2001	John Loyd Spence	PK-US015147	6911
22919	7590	07/06/2004	EXAMINER PICKARD, ALISON K	
SHINJYU GLOBAL IP COUNSELORS, LLP 1233 20TH STREET, NW, SUITE 700 WASHINGTON, DC 20036-2680			ART UNIT 3676	
PAPER NUMBER				

DATE MAILED: 07/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/005,178

Applicant(s)

SPENCE ET AL.

Examiner

Alison K. Pickard

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-4,6-14,16,17,19 and 21-33 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2-4,6-14,16,17,19 and 21-23 is/are allowed.
- 6) ☒ Claim(s) 24-33 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date. 4-6-04.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

1. The indicated allowability of claims 24-29 is withdrawn in view of the newly discovered reference(s) to Pyre '668. Rejections based on the newly cited reference(s) follow. The examiner regrets any inconvenience this may cause.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 24-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sumida (5,954,343) in view of Pyre (6,619,668).

Sumida discloses an axial metallic s-shaped seal comprising a first end section having a first sealing surface 46 facing a first direction and forming a first sealing dam 54 and a second end section having a second sealing surface 47 facing a second, opposite direction and forming a second sealing dam 55. The first surface is convexly curved through an arc and has a free end 48 spaced from the sealing surface (dam 54). The second surface is convexly curved through an arc and has a free end 49 spaced from the sealing surface (dam 55). The center section 53 forms a passageway, is frustoconical, and straight. Sealing loads applied to the seal torsionally deform the seal (see Fig. 2, indicates rotation (torsion) rather than bending). Sumida does not disclose the center section is at an slope not greater than 45degrees or is closer to 45 than 0 degrees, that the axial distance between first and second surfaces is smaller than a perpendicular (to axis) distance between the surfaces, or that the distance measured along the first and second directions

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is smaller than the distance measured perpendicular to the directions. Pyre teaches an axial, metallic, s-shaped seal comprising first 15 and second sealing 16 surfaces that deforms due to torsion as seen in Figure 4. Pyre teaches making the seal such that the distance H1 between the surfaces measured along the axis (Z) or along the facing directions is smaller than the distance (D2-D1) between the surfaces measured perpendicular to the axis or facing directions. By geometry, this would create a center section slope not greater than 45 or closer to 45 than 0 degrees. Pyre teaches that this dimensioning improves the sealing qualities of the gasket (see col. 1, lines 54-58). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the seal of Sumida with the dimensions (between sealing surfaces) of Pyre to improve the sealing characteristics.

Allowable Subject Matter

4. Claims 2-4, 6-14, 16, 17, 19, and 21-23 are allowed.

Response to Arguments

5. Applicant's arguments with respect to claims 24-33 have been considered but are moot in view of the new ground(s) of rejection.

It is not considered inventive to discover the workable or optimum ranges by routine experimentation. See *In re Aller*, 105 USPQ 233, 235 (CCPA 1955). Pyre discloses and teaches that it is known to use the claimed dimensioning in an s-shaped metallic seal.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

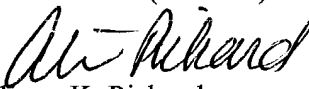
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alison K. Pickard whose telephone number is 703-305-0882.

The examiner can normally be reached on M-F (10-7:30), with alternate Friday's off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Swann can be reached on 703-306-4115. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Alison K. Pickard
Primary Examiner
Art Unit 3676

AP